

Composite Wood Product ATCM Stakeholder Meeting

May 2, 2006
1001 I Street
Sacramento, California



California Environmental Protection Agency
Air Resources Board

Stakeholder Meeting Overview

- Background
- Regulation Applicability
- Proposed Standards
- Basis for Standards
- Regulatory Requirements
 - Manufacturers
 - Distributors, Importers, and Fabricators
 - Retailers
- Open Discussion
- Next Steps

Background: ARB Efforts

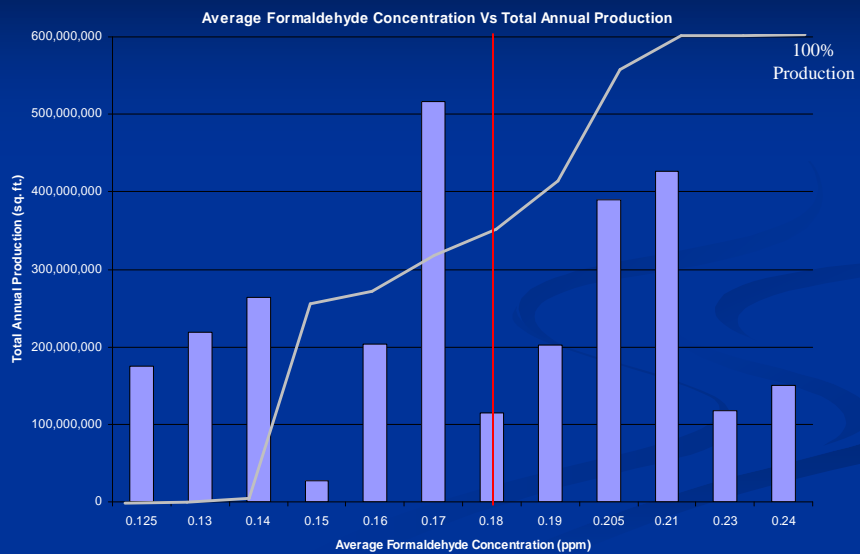
- Identified as TAC in 1992 with cancer and noncancer effects
- Started discussions on control efforts Fall 2001
- Composite Panel Assn. Meeting in 2002
 - Overview of the industry and resin chemistry
- 2002 ARB Survey
 - Initial evaluation of raw panel HCHO emissions and state-of-science
- 2005 BACT Assessment

Background: Worldwide Emission Standards

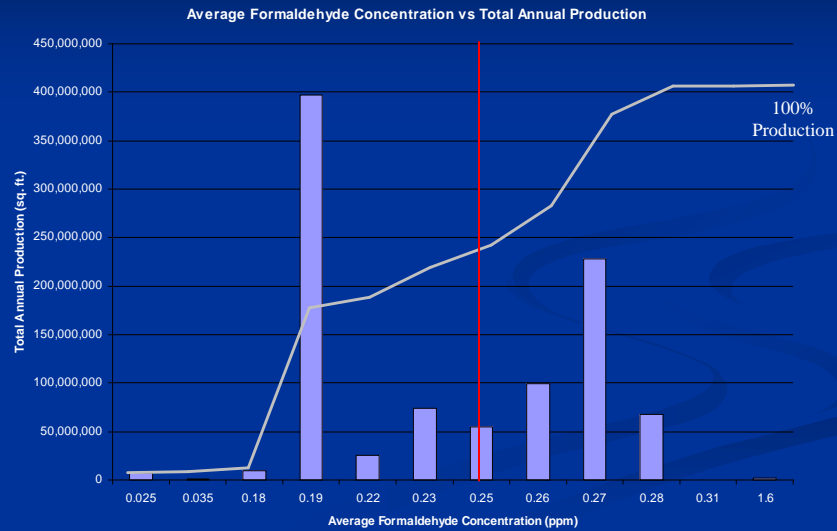
- United States
 - 1985 HUD standards; voluntary
 - New ASTM/ANSI specifications under review
- Europe
 - E1 standards for plywood and particleboard are about half of the HUD standards
- Japan (F** - F****)
 - F*** standard is stringent, technology-forcing for some products
 - F**** standard represents de minimis levels

ARB Survey

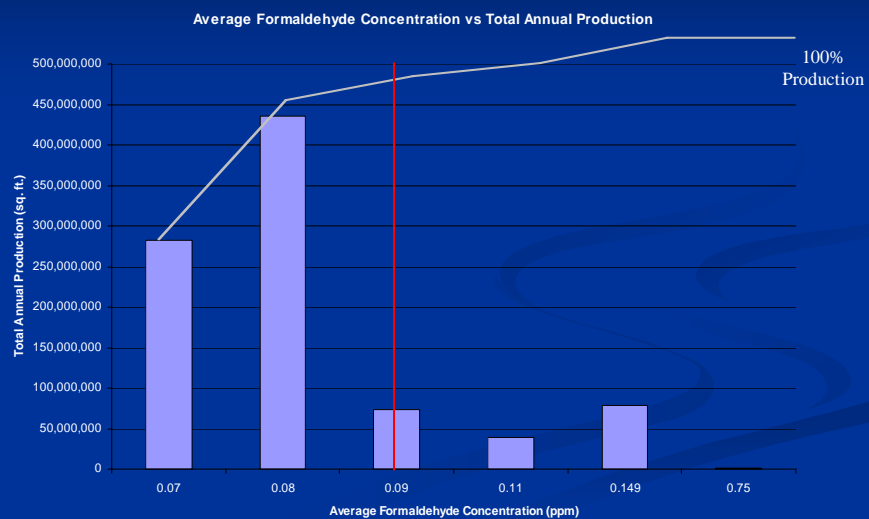
Particleboard



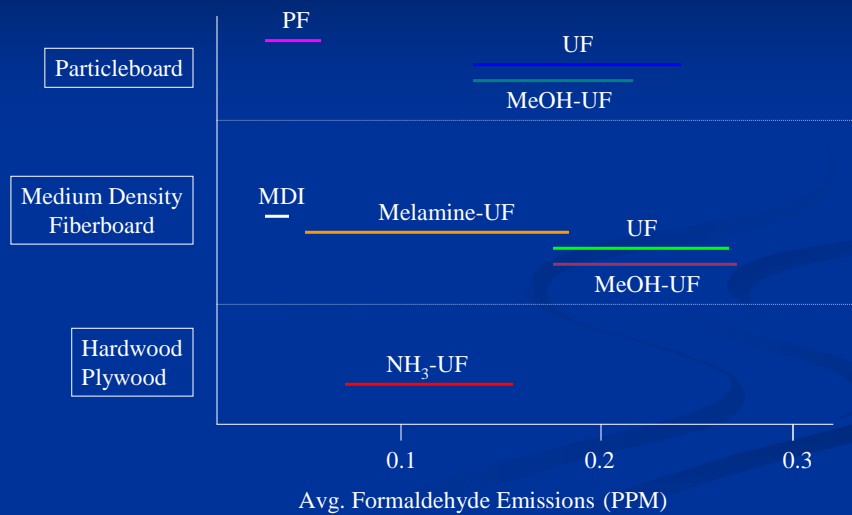
Medium Density Fiberboard



Hardwood Plywood



2002 CWP Survey- *Resin Use*



Draft Regulation: Applicability

- Manufacturers of raw HWPW, PB, and MDF panels
- Distributors and importers of raw panels
- Fabricators that use raw panels to build other products
- Retailers
- Does not apply to consumers

Proposed Standards for Hardwood Plywood (HWPW)

- Phase 1: Effective July 1, 2008
 - ASTM E1333 Concentration = 0.09 ppm
 - Achieved by 85% in 2002 survey
 - One HCHO-free product-line already commercialized
- Phase 2: Effective July 1, 2010
 - ASTM E1333 Concentration = 0.03 ppm
 - In the range of F***

Proposed Standards for Particleboard (PB)

- Phase 1: Effective July 1, 2008
 - ASTM E1333 Concentration = 0.15 ppm
 - Achieved by 45% in 2002 survey
 - Comparable to the E1 standard
- Phase 2: Effective July 1, 2010
 - ASTM E1333 Concentration = 0.05 ppm
 - In the range of F***

Proposed Standards for Medium Density Fiberboard (MDF)

- Phase 1: Effective July 1, 2008
 - ASTM E1333 Concentration = 0.19 ppm
 - Achieved by 40% in 2002 survey
- Phase 2: Effective July 1, 2012
 - ASTM E1333 Concentration = 0.05 ppm
 - In the range of F***
 - Assumes advancements in PB resin systems are transferable

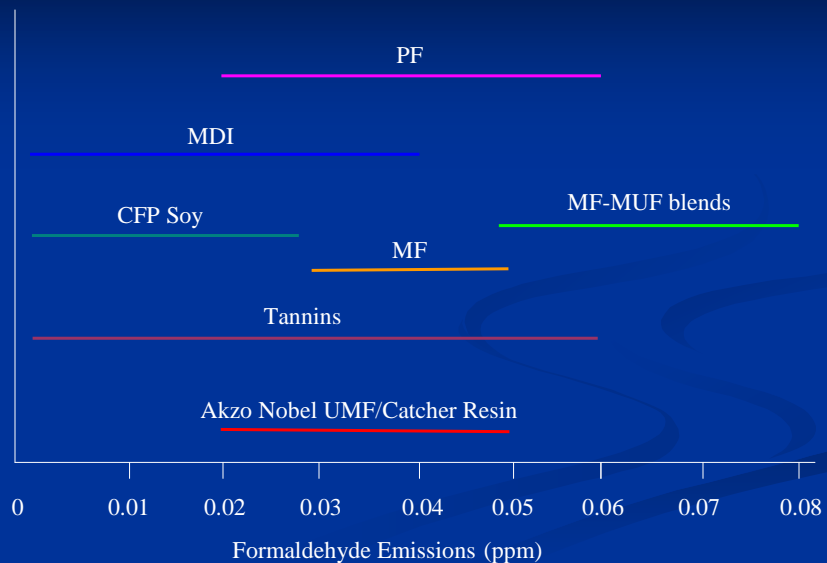
Best Available Control Technology

- H&S Code Section 39666 requires ARB to develop ATCM's "...to reduce emissions to the lowest level achievable through application of best available control technology or a more effective control method,..."
- Technologically feasible current available control methods
- Availability and suitability of alternative compounds or methods for reducing exposures

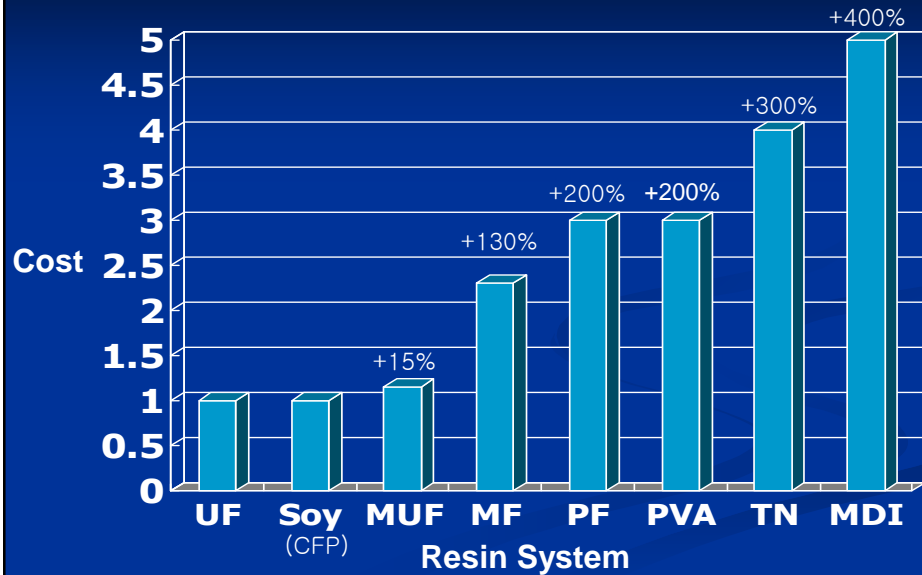
CARB BACT Assessment

- Patents
- Scientific Literature
- Consultations with Resin Researchers
 - Domestic (Dr. Kaichang Li; Dr. Susan Sun)
 - International (Dr. Anthony Pizzi; Dr. Marc Schneider; Dr. Peter Herder)
- Consultations with Resin Manufacturers
- Consultations with Other Academia
 - Dr. R.C. Tang, Dr. Moon Kim, Dr. Myron Kelly, Dr. Laurent Matuana, Dr. Todd Shupe, Dr. Doug Gardner, Dr. Michael Wolcott, Dr. William Johns
- ARB Survey

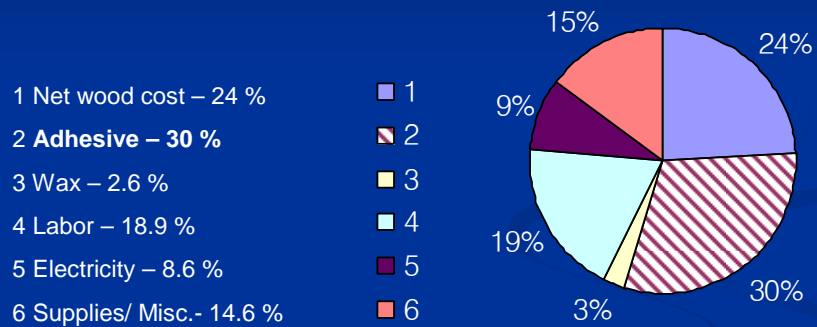
Low Formaldehyde Resin Technology



Resin Compared to UF Costs



Distribution of Particleboard Manufacturing Cost



Source: Resource Information Systems Inc.

Wood Products Review, 1997

Cited in *Canadian Forest Industries Wood-Based Panel Products: Technology Roadmap II. Panels in Perspective Table 2*

Regulation Cost Estimate Particleboard

Current Wholesale Cost

- \$6.88 per 4' x 8' sheet
- 30% is resin cost (\$2.06)

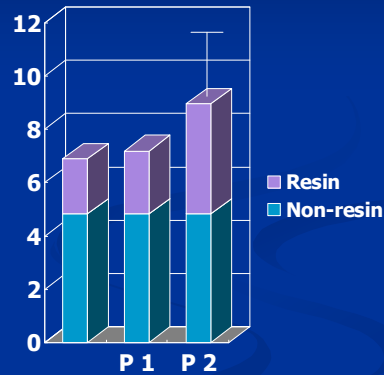
Phase 1

Resin Cost Increased by 15% -
\$ 7.19

Phase 2

Resin Cost Increased by 100% -
\$ 8.94

	Wholesale	Retail
Phase 1	+ 4.5% (\$7.19)	+ 3.1% (\$10.31)
Phase 2	+ 29.9% (\$8.94)	+ 20.6% (\$12.06)



Current Particle Board Retail Cost:
~ \$10 / sheet

Distribution of MDF Manufacturing Cost

1 Net wood cost – 29%

2 Adhesive – 27%

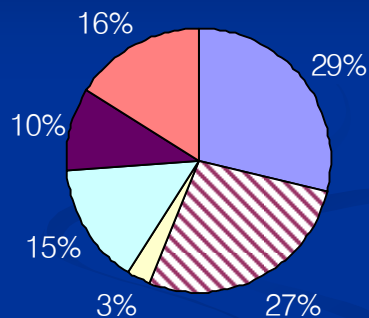
3 Wax – 3%

4 Labor – 15%

5 Electricity – 10%

6 Supplies/ Misc.- 16%

- 1
- 2
- 3
- 4
- 5
- 6



Source: Resource Information Systems Inc.

Wood Products Review, 1997

Cited in *Canadian Forest Industries Wood-Based Panel
Products: Technology Roadmap II. Panels in Perspective Table 2*

Regulation Cost Estimate MDF

Current Wholesale Cost

- \$9.60 per 4' x 8' sheet
- 27% is resin cost (\$2.59)

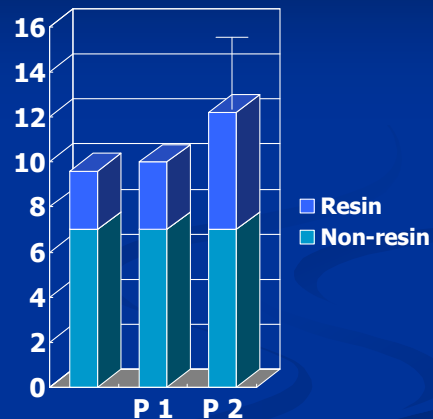
Phase 1

Resin Cost Increased by 15% -
\$ 9.99

Phase 2

Resin Cost Increased by 100% -
\$ 12.19

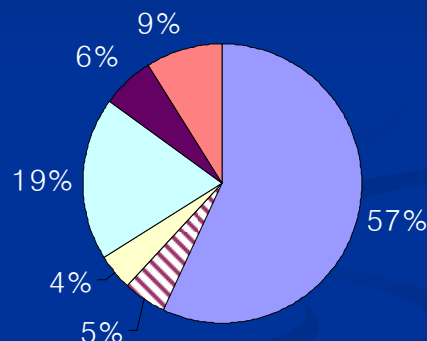
	Wholesale	Retail
Phase 1	+ 4% (\$9.99)	+ 2% (\$20.39)
Phase 2	+ 27% (\$12.19)	+ 13% (\$22.59)



Current MDF Retail Cost: ~\$20 /sheet

Distribution of Hardwood Plywood Manufacturing Cost

- 1 Wood – 57%
- 2 Adhesive – 5%
- 3 Maintenance– 4%
- 4 Labor – 19%
- 5 Electricity – 6%
- 6 Supplies/ Misc.- 9%



Source: United States Dept. of Agriculture

General Technical Report FPL-GTR-90

Capacity, Production, and Manufacture of Wood-Based Panels in the United States and Canada

Regulation Cost Estimate Hardwood Plywood

- Resin costs typically 5% of production cost.
 - 100% resin cost increase only results in 5% increase in wholesale cost.
- Hardwood Plywood cost is mostly derived by wood veneer price.
 - Retail price ranges from about \$10 to \$40
- Current PVA HWPW is about 15% higher than UF HWPW

Draft Regulation: Manufacturers I

- Emission standard compliance via Third Party Certification
 - CPA Grademark and HPVA programs (modified)
- Primary test protocol – ASTM 1333
 - Use of alternatives subject to ARB approval
- Product labeling
 - Marked as ARB-P1 or ARB-P2 compliant
- Records maintenance and reporting

Draft Regulation: Manufacturers II

- Chain-of-custody (CoC) Program
 - Modeled after Forest Stewardship Council and Sustainable Forest Initiative
- Facility inspections and enforcement
 - Verify CoC program and raw panel testing
- Exemptions
 - Products for the 1985 HUD standard
- Sell-through

Draft Regulation: Distributors, Fabricators, and Importers (DFI)

- Records maintenance
- Inspections and enforcement
- Sell-through provisions

Draft Regulation: Retailers

- Records maintenance
 - It would be a violation for retailers to purchase raw panels from distributors or importers that do not comply with applicable phase 1 or phase 2 emission standards
 - It would be a violation for retailers to purchase finished goods from distributors, importers, or fabricators that were not made with applicable phase 1 or phase 2 compliant materials

Sell-Through – Raw Panels

Phase 1

Effective Date	HWPW	PB	MDF
Phase 1 Standard	1 Jul '08	1 Jul '08	1 Jul '08
Manufacturers must sell only P1-certified products (1-month AED ⁽¹⁾)	1 Aug '08	1 Aug '08	1 Aug '08
Distributors and importers must sell only P1-certified products (5-months AED)	1 Dec '08	1 Dec '08	1 Dec '08
Retailers of raw panels must sell only P1-certified products (11-months AED)	1 Jun '09	1 Jun '09	1 Jun '09

⁽¹⁾ AED = After the Effective Date of the Phase 1 Standard for HWPW, PB, or MDF

Sell-Through - Finished Goods

Phase 1

Effective Date	HWPW	PB	MDF
Phase 1 Standard	1 Jul '08	1 Jul '08	1 Jul '08
Manufacturers must sell only P1-certified products (1-month AED)	1 Aug '08	1 Aug '08	1 Aug '08
Distributors and importers must sell only P1-certified products (5-months AED)	1 Dec '08	1 Dec '08	1 Dec '08
Fabricators must sell only P1-certified products (12-months AED)	1 July '09	1 July '09	1 July '09
Retailers of finished goods must sell only P1-certified products (18-months AED)	1 Jan '10	1 Jan '10	1 Jan '10

Sell-Through - Raw Panels

Phase 2

Effective Date	HWPW	PB	MDF
Phase 2 Standard	1 Jul '10	1 Jul '10	1 Jan '12
Manufacturers must sell only P2-certified products (1-month AED)	1 Aug '10	1 Aug '10	1 Feb '12
Distributors and importers must sell only P2-certified products (5-months AED)	1 Dec '10	1 Dec '10	1 Jun '12
Retailers of raw panels must sell only P2-certified products (11-months AED)	1 Jun '11	1 Jun '11	1 Dec '12

Sell-Through - Finished Goods

Phase 2

Effective Date	HWPW	PB	MDF
Phase 2 Standard	1 Jul '10	1 Jul '10	1 Jan '12
Manufacturers must sell only P2-certified products (1-month AED)	1 Aug '10	1 Aug '10	1 Feb '12
Distributors and importers must sell only P2-certified products (5-months AED)	1 Dec '10	1 Dec '10	1 Jun '12
Fabricators must sell only P2-certified products (12-months AED)	1 Jul '11	1 Jul '11	1 Jan '13
Retailers of finished goods must sell only P2-certified products (18-months AED)	1 Jan '12	1 Jan '12	1 Jul '13

Next Steps

Conference Call	May 18, 2006
Public Workshop	June 20, 2006
2 nd Public Workshop	Mid-July
45-day Comment Period	August 11, 2006
Board Hearing	September 28, 2006



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